12. The radiation imaging system according to claim 11, wherein the radiation imaging system has a tomosynthesis imaging mode in which radiation is sequentially emitted from the radiation sources arranged in a row, and a non-tomosynthesis imaging mode in which radiation is emitted only from the dual-purpose radiation source.

13. The radiation imaging system according to claim 12, wherein the system control apparatus performs control so that a first acceleration voltage is applied between the electron source and the target unit of each of the radiation sources in the tomosynthesis imaging mode, and a second acceleration voltage different from the first acceleration voltage is applied between the electron source and the target unit of the dual-purpose radiation source in the non-tomosynthesis imaging mode.

14. A multi X-ray generation apparatus comprising:

a cathode array having a plurality of electron emitting sources each of which is aligned in a sequential manner;

an anode array having a shield member having a plurality of apertures corresponding to the electron emitting source and a plurality of targets each of which is secured to the corresponding aperture; and

a vacuum envelope having a cavity for storing the cathode array therein and an opening for securing the anode array,

wherein the plurality of targets includes a dual-purpose target used for both tomosynthesis imaging and non-tomosynthesis imaging and a plurality of single-purpose targets used only for tomosynthesis imaging, and

wherein a distance between a focal spot on the dual-purpose target and the shield member is shorter than a distance between a focal spot on any one of the plurality of single-purpose targets and the shield member such that a thermal transmittance from the dual-purpose target to the shield member is higher than a thermal transmittance from any one of the plurality of single-purpose targets to the shield member.

15. The multi X-ray generation apparatus according to claim 14, wherein, when electrons are irradiated under the same conditions, an electron irradiated surface of the dual-purpose target is configured to have a smaller temperature increase than that of each of the single-purpose targets.

16. The multi X-ray generation apparatus according to claim 15, wherein the dual-purpose target has higher heat release properties than those of each of the single-purpose targets.

17. The multi X-ray generation apparatus according to claim 15,

wherein the plurality of targets includes a substrate and a target layer which is formed on a side of the substrate on the side facing the electron emitting source, and

wherein the substrate of the dual-purpose target is thicker than the substrate of each of the single-purpose targets.

18. The multi X-ray generation apparatus according to claim 15,

wherein the plurality of targets includes a substrate and a target layer which is formed on a side of the substrate on the side facing the electron emitting source, and

wherein the substrate of the dual-purpose target has a larger diameter than that of each of the substrates of the single-purpose targets.

19. The multi X-ray generation apparatus according to claim 15,

wherein the dual-purpose target is arranged with an inclination with respect to a direction in which the electrons are caused to be incident, and

wherein each of the single-purpose targets is arranged perpendicularly with respect to the direction in which the electrons are caused to be incident.

20. The multi X-ray generation apparatus according to claim 14,

wherein the plurality of apertures of the shield member allow passing of the electrons and allows emission of radiation generated by the plurality of targets to a predetermined region.

21. The multi X-ray generation apparatus according to claim 20, wherein the shield member of the dual-purpose target is thicker than each of the shield members of the single-purpose targets in a direction perpendicular to the row of the targets and a direction in which the electrons are caused to be incident.

22. The multi X-ray generation apparatus according to claim 20, wherein a heat-release fin is connected to the shield member of the dual-purpose target.

23. The multi X-ray generation apparatus according to claim 20, wherein the shield member is integrally formed.

24. A radiation imaging system comprising:

the multi X-ray generation apparatus according to claim 14;

a radiation detection apparatus configured to detect radiation that has been emitted from the multi X-ray generation apparatus and has passed through an object; and

a system control apparatus configured to perform cooperation control over the X-ray generation apparatus and the radiation detection apparatus.

25. The radiation imaging system according to claim 24, wherein the radiation imaging system has a tomosynthesis imaging mode in which radiation is sequentially emitted from the electron emitting sources arranged in a row, and a non-tomosynthesis imaging mode in which radiation is emitted only from the dual-purpose target.

26. The radiation imaging system according to claim 25, wherein the system control apparatus performs control so that a first acceleration voltage is applied between the electron emitting source and the plurality of targets in the tomosynthesis imaging mode, and a second acceleration voltage different from the first acceleration voltage is applied between the electron emitting source and the dual-purpose target in the non-tomosynthesis imaging mode.

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